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10/658,456	09/10/2003	Tatsuhiko Fukuzawa	50195-387	2237

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Washington, DC 20005-3096

EXAMINER

LEE, CYNTHIA K

ART UNIT	PAPER NUMBER
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1745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/658,456

Applicant(s)

FUKUZAWA ET AL.

Examiner

Cynthia Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 3-6,9-11 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,7,8 and 12-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 9/10/03, 5/3/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☒ Other: IDS: 9/29/2006.

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Election/Restrictions

Applicant's election with traverse of Group I and Species I-b in the reply filed on 12/4/2006 is acknowledged.

The traversal is on the ground(s) that claims 1-3, 7, 8, and 12-19 are generic to all species. This is not found persuasive because the argument that claim 19 being generic to all species is irrelevant because claim 19 was not part of the election of Group I. Further, the Examiner disagrees that 1-3, 7, 8, and 12-19 are generic and notes that only claims 1,2, 12-18 are generic to Group I.

The requirement is still deemed proper and is therefore made FINAL.

Priority

Acknowledgement has been made of applicant's claim for priority under 35 USC 119 (a-d). The certified copy has been filed on 9/10/2003.

Information Disclosure Statement

The Information Disclosure Statement (IDS) filed 9/29/2006, 5/3/2004, and 9/10/2003 have been placed in the application file and the information referred to therein has been considered.

Drawings

The drawings received 9/10/2003 are acceptable for examination purposes.

Claim Analysis

The Examiner has taken a reasonable and broadest interpretation of the limitation "wire" to mean the definition 1. of the following:

wire

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- n.**
1. A usually pliable metallic strand or rod made in many lengths and diameters, sometimes clad and often electrically insulated, used chiefly for structural support or to conduct electricity.
 2. A group of wire strands bundled or twisted together as a functional unit; cable.
 3. Something resembling a wire, as in slenderness or stiffness.
 4. An open telephone connection.
 5. *Slang*. A hidden microphone, as on a person's body or in a building.
 6.
 - a. A telegraph service.
 - b. A telegram or cablegram.
 7. A wire service.
 8. *Computer Science*. A pin in the print head of a computer printer.
 9. The screen on which sheets of paper are formed in a papermaking machine.
 10. *Sports*. The finish line of a racetrack.
 11. **wires**
 - a. The system of strings employed in manipulating puppets in a show.
 - b. Hidden controlling influences.
 12. *Slang*. A pickpocket.
 13. Fencing made of usually barbed wire.
 - v. **wired, wiring, wires**.
 - v. **tr.**
 1. To bind, connect, or attach with wires or a wire.
 2. To string (beads, for example) on wire.
 3. To equip with a system of electrical wires.
 4. *Slang*. To install electronic eavesdropping equipment in (a room, for example).
 5. To send by telegraph: *wired her congratulations*.
 6. To send a telegram to.
 7. *Computer Science*. To implement (a capability) through logic circuitry that is permanently connected within a computer or calculator and therefore not subject to change by programming.
 8. To determine or put into effect by physiological or neurological mechanisms; hard-wire: *It is plausible that the basic organization of grammar is wired into the child's brain* (Steven Pinker), *The Language Instinct* 1994.
 - v. **intr.** To send a telegram.
- Idioms**
- down to the wire** *Informal* To the very end, as in a race or contest.
- under the wire**
1. *Sports*. At the finish line.
 2. *Informal*. Just in the nick of time; at the last moment.
- [Middle English, from Old English *wīr*.]
- *wīr* a **•**ble, *adj.*

Note about stress marks: / (primary); // (secondary), as in **pronunciation** (pronun//cia//tion)

The American Heritage Dictionary of the English Language, © Houghton Mifflin Company 2003



APA | MLA | Chicago : [Citing this entry](#)

wire. (2003). In *The American Heritage Dictionary of the English Language*. Retrieved February 07, 2007, from <http://www.xreferplus.com/entry/4148309>

The limitations in claims 16 and 17 are interpreted as intended use. The Examiner notes that it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations.

Ex Parte Masham, 2 USPQ2d 1647 (1987). See MPEP 2114.

Claim Objection

Claims 16 and 17 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

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Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 16 and 17 do not further limit claim 1.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what constitutes "pieces of the polymer batteries".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 13, 14-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Hiroi (JP 11-307124).

Hiroi discloses a secondary battery having a structure provided with a positive electrode composed by forming a positive electrode active material layer on a positive electrode collector, a negative electrode composed by forming a negative electrode active material layer on a negative electrode collector, and an ion conductive layer formed from a nonfluidic ion conductive composition containing spacer particles between the positive electrode active material layer and the negative electrode active

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material layer, to control the distance between the positive electrode active material layer and the negative electrode active material layer. See Abstract and [0029].

The spacer particles can be a fiber particle, a spherical particle, a scale-like particle and can be made of rigid plastic particles, such as ceramics, alumina, glass, a divinylbenzene, or polymethylmethacrylate (claim 2).

Hiroi's positive electrode active material comprises LiCoO_2 and the negative active material comprises carbon [0037,0038]. (claims 13 and 14)

As best understanding claim 15, the Examiner notes that Hiroi discloses a "plurality pf pieces of the polymer batteries" that are connected to form a battery.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiroi (JP 11-307124) as applied to claim 1 above, and further in view of Koyannagi (US 6580026).

Hiroi discloses all the elements of claim 1. Hiroi does not disclose that the spacer is a metallic wire whose surface is coated with resin. However, Koyannagi teaches a cell in which a separator contains spacer particles. The spacer particles can also be rod-shaped (applicant's wire). With respect to the materials, use can be made

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of known insulating particles of resins, organic, inorganic composites, metal oxides, ceramics and the like. (13:50-60)

Koyannagi further teaches that resin coated particles can be used. Particles coated with an adherent resin adhere to the metal oxide semiconductor film and/or electrode layer, so that the particles are immobilized and do not easily move to thereby exert an effect of uniform gap regulation and a stress absorbing effect. (14:10-20) It would have been obvious to one of ordinary skill in the art at the time the invention was made to resin-coat Koyannagi's rod-shaped particles as well because Koyannagi discloses that rod-shaped particles can be used. Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hiroi's particles for Koyannagi's rod-shaped particles coated with resin for the benefit of immobilizing the spacer material, as taught by Koyannagi.

Claims 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hiroi (JP 11-307124) as applied to claim 1 above, and further in view of James (US 6451485)

Hiroi discloses all the elements of claim 1. Hiroi does not disclose a plurality of electrodes that are bipolar. However, James teaches of a bipolar battery. Such a battery typically comprises an electrode pair constructed such that cathode and anode active materials are disposed on opposite sides of an electrically conductive plate, that is, a bipolar plate. The cells that have this electrode pair are configured such that the cell-to-cell discharge path is comparatively shorter and dispersed over a large cross-sectional area, thus providing lower ohmic resistance and improved power capabilities

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compared to unipolar batteries such as automobile batteries. The bipolar electrodes are stacked into a multicell battery such that the electrolyte and separators lie between adjacent bipolar plates (5:15-30). It would have been obvious to one of ordinary skill in the art at the time the invention was made to form Hiroi's electrodes as bipolar electrodes as taught by James for the benefit of reducing the number of parts in the battery to establish electrical contact. It is noted that the connection is necessarily in series. It is further unpatentable because it would have been obvious to one of ordinary skill in the art at the time the invention was made to connect the cells, whether in series or parallel, for the benefit of increasing either the voltage or the current of the cell, depending on the requirement of the application intended.

Further, Hiroi discloses that multiple electrode laminate bodies can also be formed by alternately arranging positive electrodes and negative electrodes between the multiple ion conductive layers. Hiroi discloses that because of the presence of the multiple electrode laminate bodies, the cell capacity is further increased in comparison with that of the single electrode laminate body [0035]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to stack Hiroi's multiple unit cells for the benefit of increasing the cell performance. It would have been obvious to one of ordinary skill in the art at the time the invention was made to also connect the unit cells in series or parallel for the benefit of increasing either the voltage or the current of the cell, depending on the requirement of the application intended. It would also have been obvious to one of ordinary skill in the art at the time the invention

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was made to laminate the cells for the benefit of forming a close contact between individual elements.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Lee whose telephone number is 571-272-8699. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's trainer, Susy Tsang-Foster can be reached on 571-272-1293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ckl

Cynthia Lee


SUSY TSANG-FOSTER
PRIMARY EXAMINER